

WHAT IS CLAIMED IS:

1. An LSF (Line Spectral Frequency) quantizer for a wideband speech coder, comprising:

a subtracter for receiving an input LSF coefficient vector and removing a DC component from it;

a memory-based vector quantizer and a memoryless vector quantizer for respectively receiving the DC component removed LSF coefficient vector and independently quantizing the same;

a switch for receiving quantized vectors respectively quantized by the memory-based vector quantizer and the memoryless vector quantizer, selecting a quantized vector that has less quantized error that is a difference between the received quantized vector and the input LSF coefficient vector from among the received quantized vectors, and outputting the same; and

an adder for adding the quantized vector selected by the switch to the DC component of the LSF coefficient vector.

2. The LSF quantizer for a wideband speech coder as claimed in claim 1, wherein the memory-based vector quantizer and the memoryless vector quantizer are respectively a memory-based split vector quantizer and a memoryless split vector quantizer.

3. The LSF quantizer for a wideband speech coder as claimed in claim 2, wherein the memory-based vector quantizer predicts the input LSF coefficient vector using a primary auto-regressive (AR) predictor, and pyramid-vector-quantizes a prediction error vector that is a difference between the predicted vector and the input LSF coefficient vector.

4. The LSF quantizer for a wideband speech coder as claimed in claim 2, wherein the memoryless split vector quantizer pyramid-vector-quantizes the input LSF coefficient vector in a full vector format.

5. The LSF quantizer for a wideband speech coder as claimed in

claim 2, wherein the switch determines quantized errors using an Euclidean distance.

6. An LSF (Line Spectral Frequency) quantization method for a wideband speech coder, comprising:

- (a) removing a DC component from an LSF coefficient vector;
- (b) predicting the DC-component-removed LSF coefficient vector using a primary auto-regressive (AR) predictor, and pyramid-vector-quantizing a prediction error vector that is a difference between the predicted vector and the input LSF coefficient vector;
- (c) pyramid-vector-quantizing the DC-component-removed LSF coefficient vector in a full vector format;
- (d) receiving the quantized vectors respectively quantized in (b) and (c), selecting a quantized vector that has less quantized error that is a difference between the received quantized vector and the input LSF coefficient vector from among the received quantized vectors, and outputting the same; and
- (e) adding the quantized vector selected in (d) to the DC component of the LSF coefficient vector.

7. The LSF quantization method for a wideband speech coder as claimed in claim 6, wherein in (d), the quantized error is determined using a Euclidean distance.